

The State Pattern



Gerald Britton

Pluralsight Author

@GeraldBritton www.linkedin.com/in/geraldbritton



Overview



Shopping cart

Supermarket, eStore

Various states

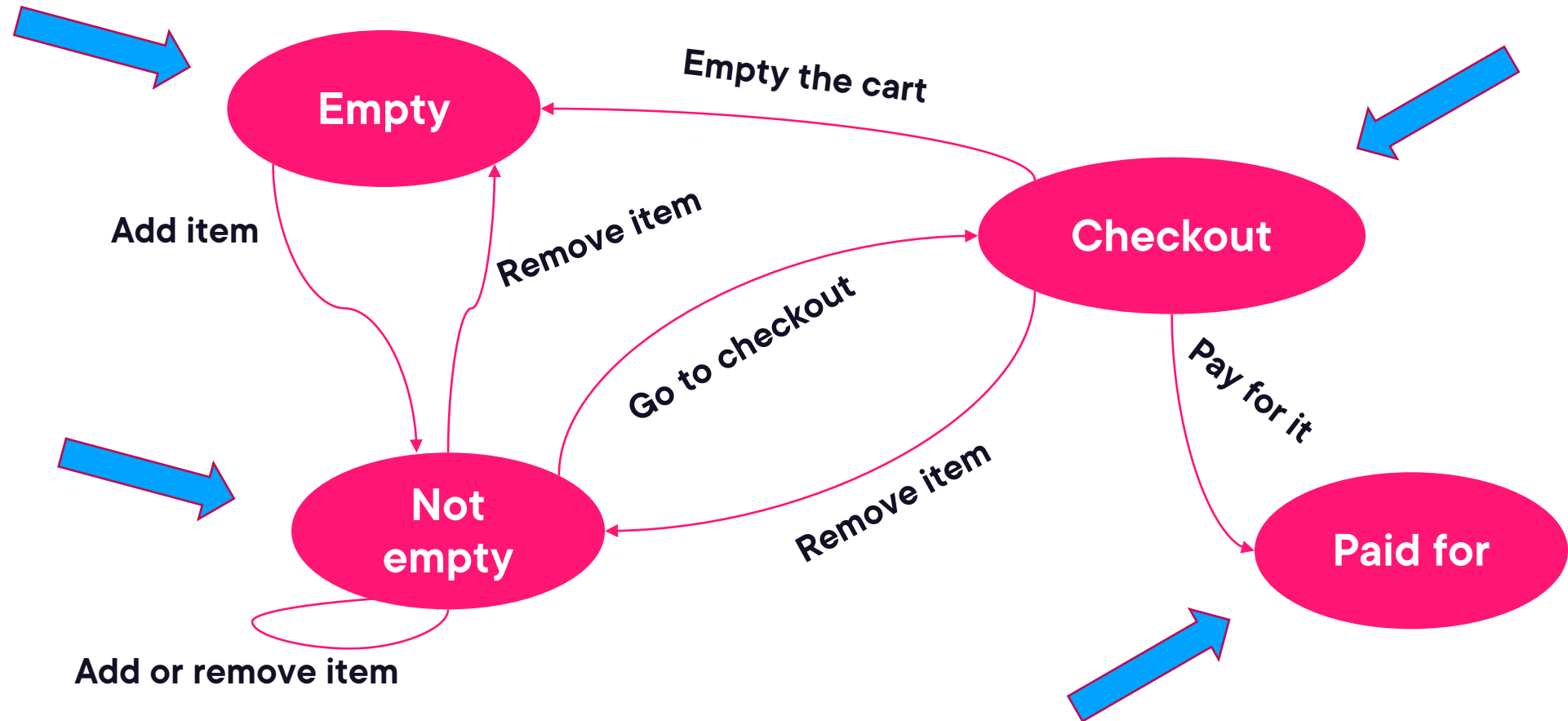
- Empty
- Containing some items
- At the checkout
- Paid for

Transitions:

- Adding and removing items
- Checking out
- Paying for your purchases



Shopping Cart State Diagram



Demo



Model the shopping cart

Use one variable to track the state

Create methods for state transitions

Run the model

See if you like the result



State

Classification: Behavioral

Operates in a particular context

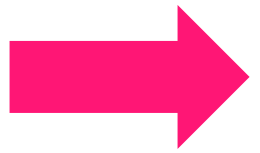
Uses a class for each state

Transitions delegated to the state objects

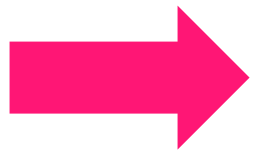
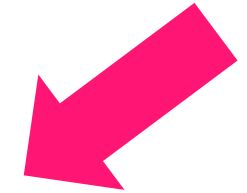
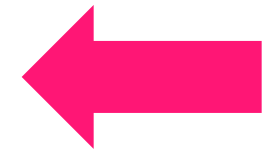
Clients interface with the context



State Pattern Structure



ps



Demo



Implement the State Pattern

Create a shopping cart context

Create state classes

Add transition handles

Make sure it still works



Consequences

Encapsulates state-specific behavior

Distributes behavior across state classes

Makes state transitions explicit

State objects can be shared

Flexible transition definitions

Can create states at transition time



Summary



When is the State Pattern applicable?

When object's behavior depends on state

Remove long if/elif/else statements

Similar in some ways to Strategy

